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Remarks

The present invention is directed to an unsulfided hydrodewaxing catalyst comprising a Group VIII metal component and a ZSM-48 molecular sieve dewaxing component wherein said catalyst is made by reduction followed by treatment with a hydrocarbon stream containing one or more oxygenates in an amount of at least 100 ppm, measured as oxygen, and wherein said Group VIII metal is Pt, Pd or mixtures thereof.

It is also directed to a process for hydrodewaxing waxy Fischer-Tropsch hydrocarbons produced over a non-cobalt catalyst to produce a dewaxed base stock, the process comprising contacting the waxy Fischer-Tropsch hydrocarbons with hydrogen in the presence of the aforementioned catalyst.

The Examiner rejects claims 1-6, 8-12 under 35 USC § 103(a) as obvious over Duprey et al. (WO 01/07538) in view of Borghard et al. (WO 96/03359).

The Examiner argues that Duprey discloses a catalyst composition comprising a hydrogenation component, a surface dealuminated aluminosilicate zeolite crystallite and a low acidity refractory oxide binder material which is essentially free of alumina. Suitable alumino-silicates include mordenite, Beta, ferrierite, ZSM-11, ZSM-5, ZSM-22, ZSM-23, ZSM-35, ZSM-38, ZSM-48, ZSM-57, SSZ-23, SSZ-24, SSZ-25, SSZ-26, SSZ-32, SSZ-33, MCM-22 and mixtures thereof. The hydrogenation component can be at least one of Group VIB, and/or Group VIII. A good product is obtained when a catalyst containing ZSM-12 is used (page 6, lines 9-11).

The Examiner acknowledges that Duprey does not disclose treatment of the dewaxing catalyst with a stream containing one or more oxygenates or the details of

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FT catalysts or synthesis process or the use of an alumina binder for the dewaxing catalyst.

The Examiner cites Borghard as disclosing zeolite B modified with boron, tin, lead or indium and combined with a hydrogenation/dehydrogenation component to convert FT heavy ends which contain paraffins, olefins and oxygenates into low pour point distillates with high cetane number and extra high VI lube oil. The lube oil can then be dewaxed using conventional solvent dewaxing processes or catalytic dewaxing processes or by increasing the severity of the hydroisomerization step. If the catalyst is to be steamed in order to achieve low acidity the steaming is performed after the catalyst has been formulated with the binder. Steaming typically utilizes a 100% steam atmosphere at 430-590°C for 12-48 hours to obtain the desired reduction in acidity.

Borghard discloses the FT process and FT catalysts.

The Examiner concludes that it would have been obvious to one skilled in the art at the time the invention was made to combine Duprey and Borghard and treat the catalyst with steam to reduce its acidity and make it more useful for dewaxing, to use the FT catalyst of Borghard in Duprey because both use FT product for hydrodewaxing and to use the alumina binder of Borghard in Duprey.

Applicants respectfully traverse this rejection.

In Duprey, the Fischer-Tropsch wax feed is described as not containing sulfur, nitrogen or metal impurities normally found in crude oil BUT it is known to contain water, trace metals and a number of unsaturated compounds and oxygenate compounds such as alcohols, ketones, aldehydes etc. which compounds "may cause a deactivation of certain catalysts used in further downstream treatment of the Fischer-Tropsch product" [page 3, lines 32-34].

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Consequently, to circumvent this undesirable deactivation the Fischer-Tropsch wax feed is subjected to a hydrotreatment process step in order to lower the content of these unsaturated or oxygenated products. While in Example 4 it is recited that the F-T wax has been subjected to hydrotreatment in order to reduce the oxygen content to below 500 ppmw as molecular oxygen, prior to being brought into contact with the dealuminated silica bound Pt/ZSM-12 catalyst under hydroisomerization condition (temperature of 388°C) this cannot be taken as a statement that any molecular oxygen actually remained in the thus treated FT wax. Consequently, it cannot be said that the catalyst used in Example 4 (the catalyst of Example 3) ever actually came into contact with a FT wax stream containing any molecular oxygen optionally at a temperature lower than the hydrodewaxing or isomerization temperature and further it cannot be said that the benefit associated with exposing a reduced hydrodewaxing catalyst to oxygenates optionally at temperatures lower than the hydrodewaxing or isomerization process temperature, as taught in the present application, ever was actually secured in the prior art. "Below 500 ppmw" includes zero as well as 499 ppmw, with no clear actual value being taught. No clear teaching is presented as to just how far "below" 500 ppmw or "above" zero ppmw the molecular oxygen content of the FT was reduced or adjusted.

The Examiner finds this argument non-persuasive. The Examiner argues that Duprey discloses "a FT wax which has been subjected to a hydrotreatment in order to reduce oxygen content to below 500 ppmw as molecular oxygen, was contacted in the presence of hydrogen with a catalyst as obtained in Example 3" (page 12, lines 12-20). The Examiner argues that no difference is seen between the Applicants' "oxygenates in an amount of at least 100 wppm, measured as oxygen" and the prior art's "oxygen content to below 500 ppmw as molecular oxygen".

Applicants traverse this interpretation.

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As previously indicated, to reduce oxygen content to below 500 ppmw, as molecular oxygen, does not teach, suggest or imply that any oxygenates actually be present, nor does it constitute a teaching or suggestion that the presence of an oxygenate at a level of lead 100 wppm is desirable nor that the catalyst be treated with an oxygenate containing stream optionally at a temperature lower than the hydrodewaxing or hydroisomerization temperature. All Duprey actually teaches is that the presence of oxygenates is undesirable and that they should be removed to avoid undesirable deactivation of the catalyst. Nothing in Duprey teaches, suggests or implies that the treatment after reduction of a hydrodewaxing catalyst comprising a Group VIII metal and ZSM-48 molecule sieve with an oxygenate containing stream optionally at a temperature below the hydrodewaxing or hydroisomerization temperature would or could result in a catalyst of enhanced selectivity performance. Teaching that it is necessary to remove oxygenates from a feed stream prior to contacting a catalyst with such a stream cannot be seen as teaching that a catalyst can be benefited by deliberately contacting a catalyst with a stream which deliberately contains oxygenates optionally at low temperatures. Merely because in Duprey the catalyst is contacted at 388°C (hydroisomerization temperature) with a stream which has had its oxygenate content reduced to below 500 ppmw as molecular oxygen cannot be taken as teaching, suggesting or implying that such a stream actually contained any oxygenates. From Duprey, knowing that oxygenates deactivate catalysts, one of skill in the art could seek to reduce the oxygenates to zero wppm, not insure that oxygenates be present to provide at least 100 wppm oxygen.

The reference does not teach, suggest or imply the beneficial result secured in respect to the catalyst when the hydrodewaxing catalyst is deliberately exposed to oxygenates subsequent to the reduction of the catalyst in hydrogen but prior to the use of the catalyst for hydrodewaxing optionally at a temperature lower than the hydrodewaxing or hydroisomerization temperature. Nothing in Duprey even actually

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teaches that the feed contain any oxygenates. Duprey's statement that oxygenation are reduced to below 500 ppmw does not mean that any oxygenates were actually present in the feed, when it was brought into contact with the catalyst at the hydroisomerization temperature.

The reference is very clear in its teaching that it is desirable, if not indeed also necessary, in order to avoid catalyst deactivation, to hydrotreat the FT wax feed to remove olefins and oxygenates prior to any hydroisomerization. This cannot be taken as teaching, suggesting or implying that a hydrodewaxing catalyst actually be deliberately treated with oxygenates optionally at a temperature lower than the hydrodewaxing or hydroisomerization temperature, prior to being used for hydrodewaxing, nor as teaching, suggesting or implying that subjecting a reduced catalyst to an oxygenate treatment optionally at a temperature lower than the hydrodewaxing or hydroisomerization would or could result in an improvement in the catalyst as evidenced by an improvement in selectivity for hydroisomerization and a reduction in the gas make during hydrodewaxing. It cannot be presumed that the feed of Duprey even actually contained any oxygenate or that the catalyst was contacted with an oxygenate containing stream optionally at a temperature lower than the hydrodewaxing or hydroisomerization temperature. In a reference which teaches that the presence of oxygenation in a feed is undesirable because oxygenates deactivate catalysts the statement in Example 4 that oxygenates are reduced to "below 500 ppmw" cannot be seen as a statement that any oxygenates are actually present in the feed at all nor as teaching, suggesting or implying that the catalyst be brought into contact with an oxygenate containing stream optionally at a temperature lower than the hydrodewaxing or hydroisomerization temperature.

The reference never recites that the FT wax feed must contain at least one oxygenate in an amount of less than 500 ppmw, but rather that the FT wax feed is hydrotreated to reduce its oxygenate content to "below 500 ppmw" as molecular

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oxygen. It cannot and should not be presumed, therefore, that the feed ever actually contained any oxygenates. The presence of oxygen is never positively recited, all this is taught or suggested in that it is highly desirable that the oxygenates be removed from the feed prior to hydroisomerization. While Duprey teaches that FT feeds contain oxygenates and the FT feed should be hydrotreated to reduce the oxygenate content to below 500 ppmw, the further statement in Duprey that oxygenates are known to deactivate catalyst would lead one skilled in the art to seek to totally remove oxygenates from any such feed, not insure that enough oxygenates are present to constitute at least 100 wppw as molecular oxygen.

This teaching of Duprey, that it is highly desirable that oxygenates be removed from the feed prior to hydroisomerization over a catalyst comprising a hydrogenation-dehydrogenation metal component on a surface dealuminated aluminosilicate zeolite, must be kept in mind as a teaching of the state of the art when considering Borghard. Duprey is a warning that the hydroisomerization feed be deoxygenated prior to being hydroisomerized. Indeed, at page 5 at line 12-24, even Borghard indicates that FT products can contain olefins and oxygenated compound, and states at line 16-21:

"If desired, the heavy oil fraction may be washed prior to upgrading in order to remove water soluble oxygenate compounds but if this is done, the residual water content should be reduced to an adequately low level if the catalyst used in the upgrading step is sensitive to steam" (Emphasis added).

From this it is clear that Borghard is not teaching that his present catalyst preparation process utilize its steaming step on catalysts which are sensitive to steam. If catalysts which are sensitive to steam must have the feed to which they are exposed reduced in residual water content then, clearly, such catalysts would not be deliberately exposed to steam or oxygenates convertible to steam in Borghard's process.

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Borghard teaches a process for treating FT hydrocarbon feedstocks over a zeolite Beta catalyst modified with boron, tin, lead or indium, combined with a hydrogenation/dehydrogenation component. In Borghard the zeolite Beta with, e.g. boron in the framework is composited with a matrix material to form a finished catalyst. The matrix material is non acidic, such as alumina, silica-alumina or silica. The zeolite Beta/matrix mixture is formed by, e.g. mulling the individual components followed by extrusion of pellets.

While Borghard at page 8 lines 3-6 recite that

"If the catalyst is to be steamed in order to achieve the desired low acidity, it is performed after the catalyst has been formulated with the binder, as is conventional."

it is clear that Borghard makes no mention of any reduction step in the forming of the catalyst prior to the steaming step. While steaming can be done before or after compositing of the zeolite beta with a matrix, it is not taught in Borghard that a metal loaded catalyst reduction step constitutes part of any catalysts preparation process prior to the steaming step.

Borghard produces catalyst by producing a modified zeolite Beta (e.g., boron modification) followed by compositing the modified zeolite Beta with a binder (e.g., silica) which composited mixture is extruded, dried and calcined (i.e., heated or burned in air or oxygen). The calcined extrudate is then exchanged with ammonium nitrite solution after which it is again calcined. The calcined ammonium nitrate exchange material (called the exchanged catalyst) is then steamed.

Following steaming the catalyst is finally loaded with a catalytically active metal (in the case of the example platinum in the form of platinum tetraamine chloride)

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followed by a calcinations step. At no point is "reduction" mention, taught or even suggested as a step to be practical prior to the steaming step.

As is clear, the steaming which may be conducted after catalyst formation is a steaming step conducted after the modified zeolite Beta has been composited with the binder (e.g., the silica).

Nothing in Borghard teaches, suggests or implies that a steaming step can or should ever be performed following a catalytically active metal loading step, the catalytic activity being achieved by the reduction of the metal as loaded (e.g., metal salt or metal oxide) into element metal.

The Examiner points to page 14, lines 29-31 to support an argument that the catalyst can be subjected to a reduction step. In that example a boron-containing zeolite beta is milled with silica in a zeolite:silica weight rates of 65:35, extruded, dried, calcined at 900°F for 3 hours in nitrogen followed by 1000°F in air for three hours. The calcined extrudable is then exchanged with ammonium nitrate solution for 1 hour. The exchanged catalyst is then calcined in air, then steamed for 24 hours in 100% steam at 1025°F. Only then is the steamed exchanged extrudate exchanged with platinum tetraammonium chloride solution followed by a final calcination. The catalyst is then sized and loaded into a reactor. "If desires it, (i.e., the catalyst loaded into the reactor) can be sulfided at atmospheric pressure with 2% H₂S/H₂ (i.e., 2% H₂S in hydrogen) programmed up to 400°C (750°F) and held overnight". Thus it is clear that the steaming is practiced at the calcined ammonium nitrate exchanged boron-zeolite beta/silica binder extrudate, not on the metal loaded catalyst and clearly not on a metal loaded catalyst following any reduction step.

At page 14, lines 29-31 the catalyst is sulfided in 2% H₂S in H₂. In such a step the metal oxide on the support (as a consequence of the calcinations step) is

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reduced to elemental metal then part or all of the elemental metal is converted to metal sulfide. Nothing in Borghard teaches, suggests or implies that this sulfided metal catalyst be steam. In Borghard steaming is practiced on the extrudate prior to any metal being loaded into the extrudate and clearly prior to any reduction of any metal loaded extrudate! Borghard is not teaching, suggesting or implying an unsulfided catalyst which is a Group VIII metal on ZSM-48 catalyst which following reduction, is treated with an oxygenate or water containing stream, nor a hydrodewaxing process, wherein the hydrodewaxing catalyst which is a unsulfided Group VIII metal/ZSM-48 catalyst, following reduction, is treated with an oxygenate or water containing stream.

Bearing in mind the teaching of Duprey that any oxygenates present in a hydrocarbon feed must be reduced prior to any hydroisomerization step, it is readily apparent that one skilled in the art would not be motivated to steam a fully formed catalyst, one composing a catalytically active metal component on a zeolite in combination with a binder, which finished catalyst has been reduced to prepare it for use.

Duprey teaches away from exposing such a catalyst to any oxygenates.

The Examiner rejects claims 14-26, and 30-63 under 35 USC § 103(a) as obvious over Duprey et al in view of Borghard et al.

The Examiner argues that Duprey teaches a process which yields base oil products having high VI and low pour point by contacting a synthetic wax such as FT wax, which has not been subjected to a hydroisomerization treatment, with a catalyst composition comprising at least one hydrogenation component, a dealuminated aluminosilicate zeolite and a binder essentially free of alumina. The FT wax does not contain sulfur, nitrogen or metal impurities normally found in crude oil but is known to

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contain water, trace metals, and a number of unsaturated compounds and oxygenates such as alcohols, ketones, aldehydes, etc.

Applicants respectfully traverse this rejection.

Duprey teaches a process for preparing a lubricating base oil by contacting a synthetic wax such as FT wax, which has not been hydroisomerized, with a catalyst comprising at least a hydrogenation component, dealuminated aluminosilicate zeolite and a low acidity refractory metal oxide binder essentially free of alumina.

As taught by Duprey, the FT wax is known to contain water, trace metals and unsaturated compounds and oxygenates. Duprey also expressly teaches that oxygenates "may cause deactivation of certain catalyst used in further downstream treatment of the Fischer-Tropsch product" [see page 3, lines 32-34].

As a consequence to this presence of oxygenates in the FT wax in Duprey the FT wax is subjected to hydrotreatment in order to reduce the oxygenate content. In Example 4 the oxygenate content is reduced to "below 500 ppmw" as molecular oxygen. As previously argued above, "below 500 ppmw" cannot be taken as a recitation that any oxygenates actually remained in the hydrotreated FT wax feed. "Below 500 ppmw oxygenates" embraces zero as well as 499 ppmw. No clear or unambiguous oxygenates content level is recited. It cannot be presumed that the feed actually contained any oxygenates. What is positively recited, however, is the clear teaching that the presence of oxygenates in the FT wax feed is not desirable and that ways must be practiced to remove the oxygenates from such FT wax feed so as to avoid deactivation of certain catalysts used in further down stream treatment of the FT wax.

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No benefit is associated with retaining oxygenates in the FT wax feed. All that is clearly taught is that the presence of oxygenates in FT wax feed is detrimental!

Consequently Duprey cannot be taken as teaching, suggesting, implying or motivating any practitioner skilled in the art of catalytic hydroisomerization or hydrodewaxing to deliberately treat the hydroisomerization or hydrodewaxing catalyst, following reduction, with a hydrocarbon feed containing oxygenates at any temperature, including temperatures below the hydroisomerization or hydrodewaxing process temperature, prior to being employed in the hydroisomerization or hydrodewaxing process to increase the catalyst's selectivity in hydrodewaxing.

Borghard does not rectify this defect.

Nothing in Borghard teaches, suggests, implies or acts to motivate one skilled in the art to contact a reduced unsulfided catalyst with a hydrocarbon feed containing oxygenates prior to being used catalytically in a hydroisomerization or hydrodewaxing process.

Borghard teaches steaming of a modified zeolite Beta catalyst material following it being composited with a binder. This is not a finished catalyst but only a mixture of zeolite Beta and binder. There has been no reduction step up to this point. Indeed, in Borghard only calcination steps are recited, even after catalytic metal has been added to the steamed zeolite Beta/binder combination.

Borghard does not teach, suggest, imply or motivate one skilled in the art to treat a finished, reduced unsulfided catalyst with a hydrocarbon stream containing one or more oxygenates in an amount of at least 100 wppm measured as oxygen, such

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treatment to be conducted optionally at a temperature below hydrodewaxing temperatures.

Borghard cannot be read in a vacuum. Borghard, which steams its unreduced but calcined zcolite Beta/binder composite prior to the addition of any metal cannot be seen as suggesting that Duprey be modified to include a step of subjecting a reduced unsulfided metal containing catalyst to a treatment with a hydrocarbon fluid containing oxygenates at 100 wppm, as molecular oxygen, when Duprey itself teaches that oxygenates are detrimental to isomerization catalysts and are to be removed from the feed by hydrotreatment before the feed is subjected to isomerization over the catalyst and Borghard also teaches that if water is used to remove oxygenates from FT feed, the residual water content of such feed must be reduced to some unspecified adequately low level of the catalyst is sensitive to steam. In said instances one skilled in the art would clearly not deliberately steam a catalyst if he goes to the trouble of removing residual water from the feed to avoid the steaming of steam sensitive catalysts.

It is believed the present invention is not obvious over this combination of references.

As demonstrated in the present application, treatment of the reduced unsulfided catalyst with a hydrocarbon feed containing oxygenates prior to using the catalyst for hydrodewaxing resulted in a process which had a lower gas make than did a process using a reduced catalyst which had not been so treated (See paragraph 0046 and Figure 2) i.e., the treatment increases the catalyst's selectivity in hydrodewaxing. Further, the yield of dewaxed oil for a given pour point was higher in the process using the reduced catalyst which had been pretreated with the oxygenate containing hydrocarbon stream as compared to the process using the reduced catalyst in the untreated form (Paragraph [0047] and Figure 3). This is totally unexpected in view of

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Duprey which argues and teaches that oxygenates are detrimental and need to be removed from the feed prior to hydroisomerization to avoid deactivation of such catalyst. As previously indicated Duprey's statement that oxygenates be reduced to below 500 ppmw cannot be taken as a teaching that oxygenates were actually present in the feed used in the Duprey examples or that oxygenates can be present without having a detrimental effect. Because Duprey himself teaches that oxygenates are detrimental, one skilled in the art would seek to eliminate oxygenates, not ensure that they remain in the feed.

It has been unexpectedly discovered that pretreating a reduced unsulfided catalyst with an oxygenate containing stream prior to practicing hydrodewaxing is as effective as sulfiding such a catalyst in terms of gas make and dewaxed oil product yield. Unexpectedly, the oxygenate treatment doesn't deactivate the catalyst as one would have expected from the teachings of Duprey, but rather reduces gas make and increases yield for a given pour point as compared to the untreated catalyst.

Duprey teaches that unsaturated or oxygenated products may cause deactivation of certain catalysts used in further downstream treatment of the FT product. The Examiner argues that this is not a disclosure that oxygenates cause deactivation of dewaxing catalysts.

Dewaxing catalysts are catalysts used in further downstream treatment of FT products. FT products are solid wax or waxy oil. Such products are subjected to various downstream treatments to reduce wax content or to hydroisomerize/hydrodewax the wax or waxy oil to product a lower pour point isomerization dewaxed (e.g., hydrodewaxed) oil product. As taught in USP 6,627,779 at column 12, lines 32-37

"Since the feedstock to the hydroisomerization step may contain olefins and oxygenates which can be poisons for hydroisomerization

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catalysts, the Fischer-Tropsch waxy stream may be hydrotreated prior to hydroisomerization, and the water from the conversion of the oxygenates removed, typically by distillation (not shown)."

Thus it is clear that those skilled in the art recognized oxygenates as being poisons for hydroisomerization catalysts and taught their removal from any waxy feed prior to subjecting the feed to hydroisomerization. Hydrodewaxing is an embodiment of hydroisomerization.

The Examiner rejects claim 27 under 35 USC § 103(a) as obvious over Duprey in view of Borghard and further in view of Ziemer (USP 4,867,862).

Ziemer is cited as disclosing a single stage, multi-layered catalyst system for hydrodehazing and hydrofinishing a hydrocracked, solvent dewaxed lube oil base stock.

The Examiner argues that it would have been obvious to combine Duprey, Borghard and Ziemer and dehaze the stock for a better quality lubricant.

Applicants respectfully traverse this rejection.

Applicants have demonstrated why Duprey and Borghard cannot be seen as rendering the present invention obvious. Duprey teaches against the presence of oxygenates in feed sent to an isomerization unit, arguing that oxygenates in FT wax feed are detrimental to catalysts used to treat FT wax downstream, i.e., in a hydroisomerization or hydrodewaxing step. Duprey teaches that oxygenates in FT wax feed will probably deactivate such catalysts.

Borghard subjects a calcined zeolite beta/binder composite to steam, then adds catalytic metal and calcines again to produce its catalyst. The metal loaded zeolite

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beta/binder composite can be sulfided using H_2S/H_2 . Borghard cannot be seen as teaching, suggesting, implying or motivating one skilled in the art to subject a reduced unsulfided metal catalyst to treatment with an oxygenate containing hydrocarbon stream, for to do so contradicts the very teaching of Duprey. The Examiner disagrees arguing that Borghard uses a catalyst which can be treated with H_2S/H_2 to treat or FT feed which can contain alcohols, carboxylic acids, ester and other compounds.

Applicants must disagree with the Examiner. Borghard processes FT wax over a catalyst which is a Pt/[B] zeolite beta catalyst. The catalyst "may" be sulfided using 2% H_2S/H_2 . There is no teaching that the catalyst used actually was sulfided or reduced. It is not known exactly what catalyst was employed, e.g., whether it was sulfided or unsulfided reduced or unreduced. In the face of such uncertainty, it cannot be maintained that Borghard treated a FT wax containing oxygenate over a reduced unsulfided metal on support catalyst or over a sulfided metal or support catalyst. Borghard does not teach, suggest or imply, or unquestioningly practice a process for treating FT wax containing oxygenates over a reduced unsulfided metal or support catalyst, especially a reduced unsulfided metal on ZSM-48 molecular sieve catalyst.

Because the two primary references, Duprey and Borghard, fail the teaching of Ziemer is irrelevant and claim 27 dependent ultimately on independent claim 14 shown to be patentable over Duprey and Borghard must similarly be patentable.

The Examiner rejects claims 29 and 64 under 35 USC §103(a) as obvious over Duprey in view of Borghard and further in view of Derr, Jr., et al (USP 4,684,756).

The Examiner argues that while Duprey and Borghard do not mention non-shifting FT catalysts, Derr, Jr. addresses conversion of low H_2/CO ratio syngas

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wherein it is essential that the CO reducing catalyst used include water-gas shift activity so that steam formed in the FT operation will react with charged CO to form H₂.

The Examiner concludes that because Duprey and Borghard do not mention shift activity, it would have been obvious to use a non-shift catalyst because the shift reaction is not intended by the present applicants to be in their invention because the present applicants are treating the FT products in a dewaxing operation.

Applicants respectfully traverse this rejection.

As previously indicated Duprey and Borghard are ineffective to make the underlying process of the present applicants obvious. Because the two primary references are ineffective in rendering obvious the hydrodewaxing of FT waxy hydrocarbons over a reduced unsulfided catalyst which reduced catalyst is treated with a hydrocarbon stream containing at least 100 wppm oxygenates as oxygen at temperatures below the hydrodewaxing temperature, the teaching of Derr, Jr. et al. regarding the FT wax synthesis process is irrelevant, and claims 29 and 64 are patentable.

Applicants take the opportunity to bring to the attention of the Examiner the following co-pending cases: USSN 10/652,391 (now USP 7,201,838); USSN 10/678,680 (now USP 7,077,947); USSN 10/678,684 (now USP 7,087,152) and USSN 10/678,690 (now USP 7,220,350). In the prosecution of USSN 10/652,391 (now USP 7,201,838) the Examiner rejected the case under obviousness type double patenting in light of USSN 10/678,680, USSN 10/678,648, USSN 10/678,690 and the present application USSN 10/652,390 requiring the submission of terminal disclaimers.

Applicants hereby further notify the Examiner of the existence of additional copending US Patent Applications which involve technology similar to this application: 10/678,693; 10/678,689; 10/678,434; 10/678,435; 10/266,369; 10/678,457;

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10/266,344; and 10/678,433.

It is requested that the Examiner reconsider the present application in light of the arguments presented above, that he withdraw the rejections, allow the claims and pass the case to issue in due course.

Respectfully submitted,



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☒ Pursuant to 37 CFR 1.34(a)

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